

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 86-71

WASTE DISCHARGE REQUIREMENTS FOR:

APPLIED MATERIALS, INC.
3050 BOWERS AVENUE FACILITY
CITY OF SANTA CLARA, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

1. Applied Materials, hereinafter called the discharger, operates a manufacturing facility for plasma etchers and chemical vapor deposition equipment used in the semiconductor industry. The 9 acre site is located at 3050 Bowers Avenue in the City of Santa Clara, Santa Clara County. The discharger submitted a Report of Waste Discharge for this facility in June 1986.
2. Subsurface investigations initiated in November 1983 discovered volatile organic chemicals in both soils and groundwater beneath the site. The pollution appears to be a result of leakage and/or spillage associated with the operation of three underground tanks.
3. The discharger has completed additional investigation to delineate the extent of the groundwater pollution. The predominant contaminant is trichloroethane at concentrations up to 6,700 ppb; lower concentrations of other chlorinated hydrocarbon compounds, have been detected, including trichloroethylene, dichloroethylene, dichloroethane, and Freon 113. The solvent plume has migrated a distance of 700 feet or more from the source area to the northeast, and vertically downward to a depth of approximately 50 feet.
4. The discharger has implemented interim remedial measures to cleanup the pollution. In January 1985, the underground tanks were removed, and approximately 60 cubic yards of contaminated soils surrounding the tanks were excavated to a depth of 17 feet. The excavation was converted to a collection sump, and two additional wells were installed to

control and cleanup the groundwater pollution by extraction pumping. Extracted groundwater is treated and discharged to a storm sewer tributary to San Tomas Aquino Creek in accordance with NPDES Permit CA0028851 (Order No. 85-70).

The discharger has proposed to continue operating the existing extraction/treatment system, and to periodically monitor and evaluate the effectiveness of the cleanup.

5. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives and beneficial uses for South San Francisco Bay and contiguous surface and groundwaters.
6. The existing and potential beneficial uses of the groundwater underlying and adjacent to the facility include:
 - a. Industrial process water supply
 - b. Industrial service supply
 - c. Domestic supply
 - d. Agricultural supply
7. This project constitutes a minor modification to land and as such is exempt from the provisions of the California Environmental Quality Act, (CEQA), in accordance with Section 15304 of the Resources Agency Guidelines.
8. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
9. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the state is prohibited.
2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.
3. Activities associated with the subsurface investigation and cleanup, which will cause significant adverse migration of pollutants are prohibited.

B. Specifications

1. The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in Section 13050(m) of the California Water Code.
2. The discharger shall conduct monitoring activities as needed to define the current local hydrogeologic conditions, and the lateral and vertical extent of soil and groundwater pollution in and contiguous to the zone of known pollution. Should monitoring results show evidence of plume migration, additional plume characterization shall be required.

C. Provisions

1. The discharger shall comply with Prohibitions A.1, A.2, and A.3, and Specifications B.1 and B.2 above in accordance with the following tasks and time schedule:
 - a. Continue to operate the groundwater extraction system,
 - b. Perform self-monitoring tasks according to a program approved by the Executive Officer.
 - c. Submit a technical report by December 15, 1986 which summarizes the results of an investigation to identify, locate, and evaluate abandoned wells which may act as vertical conduits for the migration of pollutants from shallow to deep aquifers.

- d. Submit quarterly technical monitoring reports on compliance with the Prohibitions, Specifications, and Provisions of this Order, commencing on January 5, 1987. These reports shall include updated evaluations on the performance of the hydraulic containment system. Specific modifications to the system and an implementation time schedule shall be proposed in the event that the extraction system is demonstrated not to be containing and cleaning up the pollutant plume.
- e. Submit a technical report by January 6, 1988 containing the remedial investigation, an evaluation of the effectiveness of the interim cleanup measures, and an evaluation of alternative final remedial measures with a recommendation on which additional measures, if any, should be implemented.

The technical report's evaluation of final remedial measures will include a projection of the cost, effectiveness, benefits, and impact on public health, welfare, and environment of each measure and will be based upon Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), upon Section 25356.1 (c) of the California Health and Safety Code, and CERCLA guidance.

- 2. All hydrogeological plans, specifications, reports, and documents shall be signed and/or stamped with the seal of a registered geologist, engineering geologist, or professional engineer.
- 3. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be provided to the following agencies:
 - a. Santa Clara Valley Water District
 - b. Santa Clara County Health Department
 - c. City of Santa Clara
 - d. State Department of Health Services/TSCD
 - e. U.S.E.P.A., Region IX Office
- 4. The dischargers shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:

- a. Entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
 - b. Access to copy any records required to be kept under the terms and conditions of this Order.
 - c. Inspection of any monitoring equipment or methodology implemented in response to this Order.
 - d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.
5. The dischargers shall file a report on any changes in site occupancy and ownership associated with the facility described in this Order.
 6. The dischargers shall maintain in good working order, and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.
 7. The Board will review this Order periodically and may revise the requirements when necessary.

I, Roger B. James, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on September 17, 1986.

A handwritten signature in dark ink, appearing to read "Roger B. James", with a stylized flourish at the end.

for ROGER B. JAMES
Executive Officer